

REMARKS

Claim 14 has been amended. Claims 10, 12, 14, and 16 remain in the application. Further examination and reconsideration of the application, as
5 amended, is hereby requested.

In Section 3 of the Office Action, the Examiner rejected claim 14 under 35 USC 112, 2nd paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.
10 Applicants have amended claim 14 to clarify the appropriate regions of doping. Claim 14 is now in conformance with the terminology used in claim 12 and the specification.

In Section 6, the Examiner notes that the application names joint inventors.
15 Each claim remaining in the application is commonly owned.

In Section 7 of the Office Action, the Examiner rejected claims 12 and 14 under 35 USC 103(a) as being unpatentable over Tada in combination with Contiero. Applicants respectfully traverse this rejection as neither Tada or
20 Contiero disclose, teach, or suggest Applicants' claimed invention alone or in combination. As MPEP 2143.03 states, "to establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art." For instance in regard for claim 12, Applicants are claiming "doping the first and second regions with a first dopant concentration *to both control the*
25 *threshold voltage* of the second conductivity type low-voltage transistor and *set a breakdown voltage* of the first conductivity high-voltage transistor." Similarly for claim 14, Applicants are claiming "doping the first and second regions with a first dopant concentration thereby *determining a threshold voltage* of the second conductivity type low-voltage transistor *and a breakdown voltage* of the first
30 conductivity type high-voltage transistor." Therefore, Applicants are using one doping step to perform two functions, 1) setting the threshold voltage of the 2nd conductivity LV transistor, and 2) setting the breakdown voltage of the 1st conductivity HV transistor. Neither Tada nor Contiero disclose, teach or suggest this limitation. Instead, Tada is using different gate oxide thicknesses to set the

breakdown voltage of the HV and LV transistors (see col. 3. lines 23-25 and specifically col. 5, lines 45-55. of Tada). Contrarily, Applicants are using the same gate oxide thickness for both the HV and LV transistors (see page 10, lines 14-21). Therefore, Tada does not anticipate or suggest Applicants claimed invention.

5 On the other hand, Contiero, while using the same gate oxide thickness for both the HV and LV transistor, discloses implanting a separate doping and diffusing it through the drain area to increase the breakdown voltage (col. 2, lines 28-38). Accordingly, prima facie obviousness has not been shown.

Further, the Examiner states that Tada does not disclose forming a first
10 conductivity type HV transistor, but that Contiero does and therefore it would be obvious to combine the teachings of Tada with Contiero “because it would enable formation of a high voltage transistor 103 of Tada to be performed.” However, this is just a conclusionary statement without an indication for what the motivation to combine would be without using the Applicants’ claimed invention as a template
15 to combine elements. As MPEP 2143.01 states, “the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.” “A statement that modifications of the prior art to meet the claimed invention would have been well with in the ordinary skill of the art at the time the claimed invention
20 was made ... is not sufficient to establish a prima facie case of obviousness without some objective reason to combine the teachings of the references.”

In addition, Applicants believe that the Examiner is not considering Applicants’ claimed invention “as a whole,” nor is the Examiner considering the references “as a whole” but rather looking at the separate elements to pick and
25 choose to form Applicants’ claimed invention. As MPEP 2141.02 states, “In determining the differences between the prior art and the claims, the question under 35 USC 103 is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious.” Further, “a prior art reference must be considered in its entirety, i.e. as a whole,
30 including portion that would lead away from the claimed invention.” Applicants are claiming a simplified process for creating an integrated circuit with both HV and LV transistors. Applicants are creating this IC by claiming a process that uses a single doping step to set the threshold voltage of a LV transistor and the breakdown voltage of the HV transistor while also not performing a V_t implant step

found in conventional processes. The cited references do not teach this claimed combination but rather each reference creates an integrated circuit using different methods to control the breakdown voltage of the HV device. Both disclosures of Tada and Contiero, when taken as a whole, teach away from Applicants' claimed invention. Accordingly, one of ordinary skill in the art with the Tada and Contiero references before them, and without the benefit of the Applicants' claimed invention or disclosure, would not be motivated to create Applicants claimed invention. For these several reasons, withdrawal of the rejection under 35 USC 103(a) and allowance of claims 12 and 14 is respectfully requested.

In Section 8 of the Office Action, the Examiner indicated that claims 10 and 16 were allowed. The Applicants wish to again express their appreciation to the Examiner for the allowance of these claims.


The prior art made of record but not relied upon by the Examiner has been reviewed, but is no more pertinent to Applicants' invention than the cited references for the reasons given above.

Applicants believe their claims as amended are patentable over the art of record, and that the amendments made herein are within the scope of a search properly conducted under the provisions of MPEP 904.02. Accordingly, claims 10,
5 12, 14, and 16 are deemed to be in condition for allowance, and such allowance is respectfully requested.

Hewlett-Packard Company
Legal Department
1000 NE Circle Blvd.
Corvallis, OR 97330
Telephone: (541)715-4197
Fax: (541)715-8581

Respectfully Submitted,

Z. Chen et al.

By: 

Timothy F. Myers

Patent Attorney

Registration No. 42,919